CLAIMS

1. A defective recombinant adenovirus, characterized in that it comprises at least one DNA sequence encoding the specific iodine transporter (Na^+/I^- Symporter) NIS or a derivative thereof.

2. The adenovirus as claimed in claim 1, characterized in that the DNA sequence is a cDNA sequence.

3. The adenovirus as claimed in claim 1, characterized in that the DNA sequence is a gDNA sequence.

4. The adenovirus as claimed in one of claims 1 to 3, characterized in that the DNA sequence encodes the specific murine iodine transporter (Na^+/I^- Symporter) NIS.

5. The adenovirus as claimed in one of claims 1 to 3, characterized in that the DNA sequence encodes the specific human iodine transporter (Na^+/I^- Symporter) NIS.

6. The adenovirus as claimed in one of claims 1 to 5, characterized in that the DNA sequence is placed under the control of a transcriptional promoter allowing its expression in tumor cells.

7. The adenovirus as claimed in claim 6, characterized in that the transcriptional promoter is

chosen from viral promoters, preferably from the promoters E1A, MLP, CMV and RSV-LTR, MT-1, SV40.

8. A defective recombinant adenovirus comprising a cDNA sequence encoding the human iodine transporter NIS under the control of the CMV promoter.

9. A defective recombinant adenovirus comprising a DNA sequence encoding the iodine transporter NIS or a derivative thereof under the control of a promoter allowing predominant expression in tumor cells.

10. The defective recombinant adenovirus as claimed in claim 9, characterized in that the promoter is chosen from the regulatory sequence of the elastase I gene, the insulin gene, the gene for immunoglobulins, the mouse mammary tumor virus, the PSA gene, the alpha-fetoprotein gene, the alpha 1-antitrypsin gene, the β-globin gene, the gene for basic myelin, the gene for the myosin light chain 2 and the gene for the gonadotrophin-releasing hormone.

11. The adenovirus as claimed in one of claims 1 to 10, characterized in that it that it comprises at least a deletion of all or part of the E1 region and a deletion of all or part of the E4 region.

12. The adenovirus as claimed in claim 11, characterized in that it comprises, in addition, a deletion of all or part of the E4 region.

13. The adenovirus as claimed in one of claims 1 to 12, characterized in that it is a human

adenovirus type Ad 2 or Ad 5 or a canine adenovirus type CAV-2.

14. The adenovirus as claimed in one of claims 1 to 13, characterized in that it comprises, in addition, at least one gene encoding a polypeptide involved in a peroxidase system such as the gene for glucose oxidase or for thyroperoxidase.

15. The use of the adenovirus as claimed in one of claims 1 to 14, for the preparation of a pharmaceutical composition intended for treating and/or for inhibiting the growth of tumors.

16. A pharmaceutical composition comprising one or more defective recombinant adenoviruses as claimed in one of claims 1 to 14.

17. The pharmaceutical composition as claimed in claim 16, characterized in that it is in injectable form.

18. The pharmaceutical composition as claimed in claim 16 or 17, characterized in that it comprises between 10^4 and 10^{14} pfu/ml, and preferably 10^6 to 10^{11} pfu/ml defective recombinant adenoviruses.